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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,100	02/28/2002	Rajesh Mongia	49598-00006USPT	4487

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EXAMINER

HAM, SEUNGSOOK

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/090,100	MONGIA, RAJESH	
	Examiner	Art Unit	
	Seungsook Ham	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The listing of references in the specification (see page 8) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Objections

Claims 4, 5, 8-19 are objected to because of the following informalities:

In claim 4, "." should be corrected to --.--;

in claim 5, "said resonator portion" lacks antecedent basis;

in claim 8, line 3, after "substrate", --;-- should be inserted;

in claim 10, "plan" should be corrected to --plane--;

in claim 12, "said output portion" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims 8-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 8, lines 8-11, "wherein at least one of said input portion.... is transversely coupled from another resonator portion, and where in at least one of said input

portion.... is longitudinally spaced from another resonator" is vague and indefinite as to where the transverse and longitudinal couplings are occurred. It appears from the specification that a traverse coupling occurs between the input portion and a resonator, but not between the resonators. Moreover, a longitudinal coupling occurs between two adjacent resonators but not between the resonator and the input/output portion. Thus, the limitation recited in lines 8-11 appears to be misleading. Furthermore, claim 8 is incomplete since filter requires an output portion to pass a signal.

Claim 20, lines 8-10 also has the same vagueness as mentioned above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 8, 10, 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Shen (US '404).

Shen (figs. 3A, 3B) discloses a high frequency filter comprising: an input portion 35 and first 33, second 34, third 33a resonators are disposed on a top side of a dielectric substrate 30; wherein at least one of the input portion and first resonator is spaced such that it is transversely coupled from another resonator portion 39; the first

resonator is longitudinally spaced from another resonator 38; a ground plane 31 on a bottom side of the dielectric substrate. Moreover, Shen discloses the filter is a bandpass, microstrip and operates at frequencies substantially between 1 GHz and 100 GHz (fig. 13B).

The subject matter of claim 18 is shown in figure 4A where the end of the first and last resonators has different width so that the input portion is disposed within the resonator.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8-10, 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang et al. ("A Modified Parallel-Coupled Filter Structure...and Response Symmetry").

Chang et al. (fig. 1(b)) discloses a high frequency filter comprising: an input portion (the first microstrip line) and first, second, third resonators (the microstrip resonators between the first and the last microstrip lines); wherein at least one of the input portion and first resonator is spaced such that it is transversely coupled from another resonator portion (the transverse gap between first two microstrip lines); the first resonator is longitudinally spaced from another resonator $S_{1,3}$, $S_{n-2,n}$. It is inherent that the microstrip line is disposed on a dielectric substrate and a ground plane on a bottom side of the dielectric substrate to form as a microstrip line structure. Moreover, Chang et al. discloses the filter is a bandpass, microstrip and operates at frequencies substantially between 1 GHz and 100 GHz (fig. 3 and TABLE 1).

Regarding claim 9, it is inherent from the device of Chang et al. that filter has fourth, fifth and six resonators since figure 1(b) shows a plurality of resonators structure.

The subject matter of claim 18 is also shown in figure 1(b) where each microstrip line resonator has a stepped portion.

Claims 8, 10, 14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ye et al. (US '461).

Ye et al. (fig. 6) discloses a high frequency filter comprising: an input portion 112 and first 104, second 106, third 110 resonators are disposed on a top side of a dielectric substrate; wherein at least one of the input portion and first resonator is spaced such that it is transversely coupled from another resonator portion (the coupling between the input portion 112 and the resonator 104); the first resonator is longitudinally spaced from another resonator (the gap between resonator 104 and 106); a ground plane on a bottom side of the dielectric substrate (col. 1, lines 58-59). Moreover, Ye et al. discloses the filter is a bandpass, microstrip and having a carrier plate (fig. 13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. (US '461).

The thickness of the dielectric substrate, the number of resonators, variation of the width of the resonators and operating the filter between 1 GHz and 100 GHz are

considered as obvious design modification to obtain a desired filter characteristic since such techniques are well known in the art.

Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen (US '404) or Chang et al. ("A Modified Parallel-Coupled Filter Structure...and Response Symmetry").

The number of resonators and the specific thickness of the dielectric substrate are considered as obvious design modification to obtain a desired filter characteristic since such techniques are well known in the art.

Claims 1-7, 11-13, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen (US '404), Ye et al. (US '461) or Chang et al. ("A Modified Parallel-Coupled Filter Structure...and Response Symmetry") in view of Stegens (US '302).

Shen, Ye et al. and Chang et al. are applied as above. These references do not show an enclosure substantially covering the plurality of resonators. However, it is well known in the art to provide an enclosure to cover the filter/resonator structure for protection. Stegens (figs. 2A-2C) discloses a microstrip filter having an enclosure to cover the filter structure to enhance the filter characteristic (see abstract).

Therefore, it would have been obvious to one of ordinary skill in the art to provide an enclosure in the device of Shen, Ye et al. or Chang et al. for protection and also enhance the filter characteristic as taught by Stegens (see abstract).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Anghel and Cook disclose a microstrip filter having an enclosure;

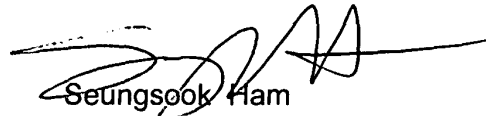
Falt (fig. 13) discloses a microstrip line filter having transverse and longitudinal couplings; and

Edwards disclose a microstrip filter having transverse coupling between step resonators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (703) 308-4090. The examiner can normally be reached on Monday - Thursday from 8:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (703)308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.


Seungsook Ham
Primary Examiner
Art Unit 2817

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Art Unit: 2817

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December 9, 2002